4.2.5.9 Public and Occupational Health and Safety

The assessments of potential radiological and chemical impacts associated with the storage alternatives at ORR are presented in this section. Summaries of radiological impacts from normal operations are presented in Tables 4.2.5.9–1 and 4.2.5.9–2 for the public and workers, respectively. Impacts from hazardous chemicals are presented in Table 4.2.5.9–3. Summaries of impacts associated with postulated accidents are presented in Table 4.2.5.9–4. Detailed results are presented in Appendix M.

No Action Alternative

This section describes the radiological and hazardous chemical releases and their associated impacts resulting from normal operations involved with the current ORR sitewide missions, including interim storage of HEU. The impacts would be within applicable regulatory limits. For facility accidents, the risks and consequences are described in site safety documentation.

Normal Operation. The current mission at ORR, where HEU is in interim storage, is described in Section 3.6. The site has identified those facilities that will continue to operate under the No Action Alternative, including interim HEU storage facilities and others, if any, that will become operational by 2005. Based on that information, the radiological and chemical releases to the environment in 2005 and beyond (future operation) were developed and used in the impact assessments. The resulting doses and potential health effects to the public and workers at ORR are described below.

Radiological Impacts. The calculated annual dose to the average and maximally exposed member of the public from total site operation; the associated fatal cancer risks to these individuals from 50 years of operation; the dose to the population within 80 km (50 mi) from total site operation in the year 2030; and the projected number of fatal cancers in this population from 50 years of operation are presented in Table 4.2.5.9–1 under this alternative at ORR. The annual dose of 3.2 mrem to the MEI is within the radiological limits specified in NESHAPS (40 CFR 61, Subpart H) and DOE Order 5400.5. From 50 years of operation, the corresponding risk of fatal cancer to this individual would be 8.0×10^{-5}. This activity would be included in a program to ensure that doses to the public are ALARA. The annual dose of 34 person-rem to the population would be within the limit in proposed 10 CFR 834. The corresponding number of fatal cancers in this population from 50 years of operation would be 0.85. To put operational doses into perspective, comparisons with natural background radiation doses are included in the table. The doses and projected fatal cancers associated with the storage component of the No Action Alternative are included in Table 4.2.5.9–1. These are seen to be much lower than those from total site operations.

Under the No Action alternative shown in Table 4.2.5.9–2, the average annual dose to a noninvolved (No Action) site worker and the annual dose to the noninvolved (No Action) total site workforce would be 2.6 mrem and 44 person-rem, respectively. The associated risk of fatal cancer to the average worker from 50 years of total site operations would be 5.2×10^{-5}, and the projected number of fatal cancers among all workers from 50 years of total site operations would be 0.88.

Hazardous Chemical Impacts. Hazardous chemical impacts to the public resulting from the normal operation under No Action at ORR are presented in Table 4.2.5.9–3. The hazardous chemical impacts from current site operations were used to estimate the baseline site impacts for the various storage alternatives. The noncancer health effects expected and the risk of cancer due to the total chemical exposures were estimated for each site. Since the major releases due to normal operation at ORR would make up nearly all of the exposures to onsite workers and to the public in adjacent communities, contributions to the hazardous chemical concentrations from all other sources, for example, industrial operations, are considered negligible for purposes of risk calculations.

Table 4.2.5.9–2. Potential Radiological Impacts to Workers During Normal Operation at Oak Ridge Reservation—Storage Alternatives

Receptor	Upgrade	Collocation[a]
Involved Workforce[b]		
Average worker dose (mrem/yr)[c]	28	264
50-year risk of fatal cancer	5.6×10^{-4}	5.3×10^{-3}
Total dose (person-rem/yr)	3	25
50-year fatal cancers	0.060	0.50
Noninvolved Workforce[d]		
Average worker dose (mrem/yr)[c]	2.6	2.6
50-year risk of fatal cancer	5.2×10^{-5}	5.2×10^{-5}
Total dose (person-rem/yr)	44	44
50-year fatal cancers	0.88	0.88
Total Site Workforce[e]		
Dose (person-rem/yr)	47	69
50-year fatal cancers	0.94	1.4

[a] The impacts are assumed to be the same for each of the three collocation storage options (refer to text).

[b] The involved worker is associated with operations of the proposed action. The maximum dose to the involved worker would be kept below 500 mrem per year. Based on a review of worker doses associated with similar operations (Section M.2.3.2), an average worker dose of 28 mrem per year was assumed. However, an effective ALARA program will ensure that the exposure will be reduced to that level which is as low as reasonably achievable. The number of involved badged workers for the upgrade and collocation alternatives would be 111 and 95, respectively.

[c] The radiological limit for an individual worker is 5,000 mrem/year (10 CFR 835). However, DOE has also established an administrative control level of 2,000 mrem per year (DOE 1992t); the site must make reasonable attempts to maintain worker doses below this level.

[d] The noninvolved worker is onsite but not associated with operations of the proposed action. The projected number of noninvolved badged workers in 2005, is 17,200. The Noninvolved Workforce is equivalent to the No Action workforce.

[e] The impact to the total site workforce is the summation of the involved worker impact and the noninvolved worker impact.

[Text deleted.]

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The HI to the MEI of the public at ORR resulting from normal operation under the No Action Alternative is 4.0×10^{-2}, and the cancer risk is zero (because no carcinogens are introduced). The HI to the onsite worker is 0.15, and the cancer risk is zero (because no carcinogens are introduced).

Facility Accidents. Under the No Action Alternative, uranium would continue to be stored at the ORR site in existing facilities. These facilities currently operate in accordance with DOE safety orders which ensure that the risk to the public of prompt fatalities due to accidents or cancer fatalities due to operations will be minimized. The safety to workers and the public from accidents at existing facilities is also controlled by Technical Safety Requirements specified in detail in SARs or a Basis for Interim Operations document prepared and maintained specifically for a facility or process within a facility. Under these controls, any change in approved operations or to facilities would cause a halt in operations until it can be established that worker and public safety has not been compromised.

Upgrade Alternative

[Text deleted.]

Preferred Alternative: Modify Existing Y–12 Plant for Continued Highly Enriched Uranium Storage

This section describes the radiological and hazardous chemical releases and their associated impacts resulting from either normal operation or accidents involved with upgraded existing HEU storage facilities at ORR. The section describes the impacts from normal facility operations at ORR, then impacts of facility accidents.

During normal operation at ORR, the operation of the upgraded Y–12 Plant would result in impacts that are within applicable regulatory limits.

Normal Operation. There would be no radiological releases during the upgrading of existing storage facilities at ORR. Construction worker exposures to material potentially contaminated with radioactivity (for example, from construction activities involved with existing contaminated soil) would be limited to assure that doses are maintained ALARA. Toward this end, construction workers would be monitored as appropriate. Limited hazardous chemical releases are anticipated as a result of the construction activities. However, concentrations would be within the regulated exposure limits. During normal operation, there would be both radiological and hazardous chemical releases to the environment and also direct exposures. The resulting doses and potential health effects to the public and workers at ORR are described below.

Radiological Impacts. Doses to the public from upgraded storage would be slightly less than for storage under No Action, as shown in Table 4.2.5.9–1. This is because the upgraded storage facility safety and design features would improve, although the quantity of stored material would be the same as for the No Action Alternative, the distance to the MEI and the public would not change appreciably, and the population density would not change. Therefore, the risks and numbers of fatal cancers among the public would remain essentially the same as under the No Action Alternative. [Text deleted.] Total site doses to the MEI and the public are expected to be similar because storage represents a small contribution to the total site.

The dose to the MEI from annual total site operations is within the radiological limits specified in NESHAPS (40 CFR 61, Subpart H) and DOE Order 5400.5, and would be 3.2 mrem. From 50 years of operations, the corresponding risk of fatal cancer to this individual would be 8.0×10^{-5}. These values are presented in Table 4.2.5.9–1. The impacts to the average member of the public would be less. This activity would be included in a program to ensure that doses to the public are ALARA. As a result of total site operations in the year 2030, the population dose would be within the limit in proposed 10 CFR 834 and would be 34 person-rem. The corresponding number of fatal cancers in this population from 50 years of total site operation would be 0.85.

Facility and total site doses to onsite workers from normal operations are given in Table 4.2.5.9–2. Included are involved workers directly associated with the upgraded Y–12 storage plant, workers who are not involved with this plant, and the entire workforce at ORR. All doses fall within regulatory limits and administrative control levels. The associated risks and numbers of fatal cancers among the different workers from 50 years of operation are included in the table. Dose to individual workers would be kept low by instituting badged monitoring and ALARA programs and also workers rotations. As a result of the implementation of these mitigation measures, the actual number of fatal cancers calculated would be lower for the operation of this facility.

Hazardous Chemical Impacts. Hazardous chemical impacts to the public and to the onsite worker resulting from the normal operations of the upgraded storage facilities at ORR are presented in Table 4.2.5.9–3. The impacts from all site operations, including the upgraded storage facilities are also included in this table. Total site impacts, which include the No Action impact plus the facility impacts, are provided. All analyses to support the values presented in this table are provided in Section M.3.

The HI to the MEI of the public is 8.6×10^{-5}, and the cancer risk would be zero (because no carcinogens are introduced) as a result of operation of the upgraded storage facilities, in the year 2030. The HI and cancer risk would remain constant over 50 years of operation, because exposures would be expected to remain the same. The total site operation, including the upgrade facility, would result in an HI of 4.0×10^{-2} and a cancer risk of zero (because no carcinogens are introduced) for the MEI in the year 2030. This would be expected to remain constant as a result of 50 years of operation.

The HI to the onsite worker would be 5.7×10^{-4} and the cancer risk would be zero as a result of operation of the upgraded storage facilities in the year 2030. The HI and cancer risk would remain constant over 50 years of operation because exposures would be expected to remain the same. The total site operation, including the

upgrade facility, would result in an HI of 0.15 and a cancer risk of zero for the MEI in the year 2030. This would be expected to remain constant as a result of 50 years of operation.

Facility Accidents. Under the Preferred Alternative at ORR, nonsurplus HEU and surplus HEU pending disposition would remain in storage at Y–12 in existing and upgraded storage facilities. Upgrades for HEU storage in Building 9212, the building used in the Y–12 EA accident analysis, would include structural modifications to numerous columns, knee braces, and cross braces to provide proper stiffness and load distribution as documented in *Natural Phenomena Upgrade of the Downsized/Consolidated Oak Ridge Uranium/Lithium Plant Facilities* (Y/EN-5080, 1994). Appendix G of the Y–12 EA contains a list of buildings and the modifications required to bring the buildings into conformance with the target performance goal that is equivalent to the structural response of new facilities. The modifications made to these facilities are expected to result in a reduction in risk of accidents to workers and the public for equivalent quantities of stored HEU. Modification to these facilities would ensure that long-term storage would be in accordance with DOE Orders, and that the risks to the public of prompt fatalities due to accidents and of latent cancer fatalities due to normal operations would be minimized. These structural modifications would reduce the risk from seismic initiators such as a beyond design basis earthquake scenario.

Buildings included in the upgrade for long-term storage at Y–12, as described in Section 2.3.1, would be evaluated by analyses employing methodologies outlined in DOE Order 5480.21, Unreviewed Safety Questions; DOE Order 5480.22, Technical Safety Requirements; and DOE Order 5480.23, Nuclear Safety Analysis Reports. Facilities and buildings within Y–12 that contain substantial quantities of enriched uranium have DOE-approved SARs that are currently undergoing review in an SAR Update Program to meet requirements of new DOE Orders (OR DOE 1994:E-3). The SAR Update Program would reflect the long-term storage upgrade at Y–12 in a Conceptual Design Report for these structural modifications as part of the Stockpile Management Restructuring Initiative that DOE is pursuing.

One of the natural phenomena initiators of accident scenarios analyzed (nuclear criticality, fire, and mechanical upset) in the Y–12 EA included a design basis accident earthquake. For the earthquake scenario, the present evaluation criterion for the design basis earthquake corresponds to a hazard exceedance frequency of 5×10^{-4} per year. The Y–12 long-term storage buildings would be upgraded to meet the performance goal for a moderate hazard facility of Performance Category 3 in DOE Order 5480.28, *Natural Phenomena Hazards Mitigation*. The Performance Category 3 facility poses a potential hazard to worker and public health and safety and to the environment because radioactive or toxic materials are present in significant quantities. Design considerations for this category are to limit facility damage so that hazardous materials can be controlled and confined, occupants are protected, and functioning of this facility is not interrupted. A performance goal for Performance Category 3 is a hazard exceedance frequency of 1×10^{-4} per year (DOE Order 5480.28). Meeting this performance goal would reduce the expected risk for the design basis accidents analyzed in the Y–12 EA for Building 9212 by approximately 80 percent, resulting in a latent cancer fatality risk of 5.1×10^{-7} to the MEI and 5.7×10^{-8} to a noninvolved worker, and potential latent cancer fatalities of 7.4×10^{-6} for the 80-km (50-mi) offsite population.

The HEU EIS describes the disposition of surplus HEU currently stored at ORR. As surplus HEU is removed for disposition, the quantity of material in storage would be reduced, and therefore fewer buildings would be needed for storage. As this a reduction in the storage footprint, the risk would be reduced accordingly. The combination of upgrading the buildings with structural modifications (as discussed above) and reducing the storage footprint as surplus HEU disposition continues are expected to result in overall reduction in the risk to the public and workers from facility accidents.

Involved workers, those that would work in the facilities associated with the proposed action, may be subject to injury and, in some cases, fatality as a result of potential accidents. The locations of workstations, number of workers, personnel protective features, engineered safety features, and other design details affect the extent of worker exposures to accidents. Certain accidents such as fires, explosions and criticality could cause fatalities to workers close to the accident. Prior to construction of a new modification of an existing facility, DOE Orders

require detailed safety analyses to assure that facility designs and operating procedures limit the number of workers in hazardous areas and minimize risk of injury or fatality in the event of an accident.

Collocation Alternative

[Text deleted.]

Construct New Plutonium Storage Facility; Maintain Existing Highly Enriched Uranium Storage Facilities at Y–12 Plant

Normal Operation. There would be no radiological releases during the construction of a new Pu storage facility at ORR. Construction worker exposures to materials potentially contaminated with radioactivity (for example, from construction activities involved with existing contaminated soil) would be limited to assure that doses are maintained ALARA. Toward this end, construction workers would be monitored as appropriate. Limited hazardous chemical releases are anticipated as a result of the construction activities. However, concentrations would be within the regulated exposure limits. During normal operation, there would be both radiological and hazardous chemical releases to the environment and also direct exposures. The resulting doses and potential health effects to the public and workers at ORR are described below.

Radiological Impacts. Since the storage of the HEU contributes negligibly to the offsite radiological impacts, this alternative would result in impacts to the public that would be virtually the same as those associated with storage in a new consolidated and collocated Pu and HEU storage facility (refer to Table 4.2.5.9–1 and the discussions of the new Pu and HEU storage facilities). Radiological impacts to workers would also be expected to be the same (refer to Table 4.2.5.9–2).

Hazardous Chemical Impacts. Impacts to the public and to the onsite worker resulting from the normal operations of the new consolidated Pu storage facility and existing HEU storage facility at Y–12 are the same, or less than, those impacts shown in Table 4.2.5.9–3 for the Collocation Alternative (construct new Pu facility and modify existing HEU facility). Total site impacts shown in the table are the sum of the impacts under No Action plus the impacts due to the additional consolidated storage facility and any incremental impacts from the modified facility over the existing HEU storage facilities at the Y–12 Plant.

Facility Accidents. A set of potential accidents have been postulated for collocation of Pu and HEU for which there may be releases of Pu or HEU that may affect onsite workers and the offsite population. Impacts of accidents that release both Pu and HEU are bounded by the impacts due to Pu exposure. The accident consequences and risks to a worker located 619 m (2,030 ft) from the accident release point, the maximum offsite individual located at the site boundary, and the population located within 80 km (50 mi) of the accident release point are summarized in Table 4.2.5.9–4. For the set of accidents analyzed, the maximum number of cancer fatalities in the population within 80 km (50 mi) would be 4.9 at ORR for the beyond design basis earthquake accident scenario with an estimated probability of 1.0×10^{-7} per year (that is, probability of severe earthquake occurring is estimated to be about 1.0×10^{-5}, once in 100,000 years, multiplied by a damage and release probability of 0.01). The corresponding 50-year facility lifetime risk from the same accident scenario for the population, maximum offsite individual, and worker at 619 m (2,030 ft), would be 2.5×10^{-5}, 2.0×10^{-7}, and 1.6×10^{-7}, respectively. The maximum population 50-year facility lifetime risk would be 0.017 (that is, one fatality in about 2,900 years) at ORR for the PCV penetration by corrosion accident scenario with a probability of 0.064 per year. The corresponding maximum offsite individual and worker 50-year facility lifetime risks would be 9.9×10^{-5}, and 7.9×10^{-5}, respectively. Section M.5 presents additional facility accident data and summary descriptions of the accident scenarios identified in Table 4.2.5.9–4.

Construct New Plutonium Storage Facility and Modify Existing Highly Enriched Uranium Storage Facilities at Y–12 Plant

Normal Operation. There would be no radiological releases during the construction of a new Pu storage facility and modification of the existing Y–12 Plant at ORR. Construction worker exposures to materials potentially contaminated with radioactivity would be limited to assure that doses are maintained ALARA. Toward this end, construction workers would be monitored as appropriate. Limited hazardous chemical releases are anticipated as a result of the construction activities. However, concentrations would be within the regulated exposure limits. During normal operation, there would be both radiological and hazardous chemical releases to the environment and also direct exposures. The resulting doses and potential health effects to the public and workers at ORR are described below.

Radiological Impacts. Because the storage of the HEU contributes negligibly to offsite radiological impacts, this alternative would also result in impacts to the public that would be virtually the same as those associated with storage in a new consolidated and collocated Pu and HEU storage facility (refer to Table 4.2.5.9–1 and the discussion of the new Pu and HEU storage facilities). Radiological impacts to workers would also be expected to be the same (refer to Table 4.2.5.9–2).

Hazardous Chemical Impacts. Hazardous chemical impacts to the public and to the onsite worker resulting from the normal operations of the new consolidated Pu storage facility and modified Y–12 Plant at ORR are presented in Table 4.2.5.9–3. The impacts from all site operations, including the consolidation of a Pu facility, are also included in this table. Total site impacts, which include the No Action impact plus the facility impacts are provided. All analyses to support the values presented in this table are provided in Section M.3.

The HI to the MEI of the public is 7.1×10^{-5}, and the cancer risk is 1.6×10^{-7} as a result of operation of the new consolidation of Pu facility in the year 2030. The HI and cancer risk would remain constant over 50 years of operation, because exposures would be expected to remain the same. The total site operation, including the consolidation of Pu facility, would result in an HI of 4.0×10^{-2} and a cancer risk of 1.6×10^{-7} for the MEI in the year 2030. This would be expected to remain constant as a result of 50 years of operation.

The HI to the onsite worker would be 8.1×10^{-4}, and the cancer risk is 1.3×10^{-5} as a result of operation of the new consolidation of Pu facility in the year 2030. The HI and cancer risk would remain constant over 50 years of operation, because exposures would be expected to remain the same. The total site operation, including the new facility, would result in an HI of 0.15 and a cancer risk of 1.30×10^{-5} for the onsite worker in the year 2030. This would be expected to remain constant as a result of 50 years of operation.

Facility Accidents. Under this alternative, the impacts of accidents are bounded by the impacts shown in Table 4.2.5.9–4 and are similar to those described in the construct new Pu storage facility; maintain existing HEU storage facilities at Y–12.

Involved workers, those that would work in the facilities associated with the proposed action, may be subject to injury and, in some cases, fatality as a result of potential accidents. The locations of workstations, number of workers, personnel protective features, engineered safety features, and other design details affect the extent of worker exposures to accidents. Certain accidents such as fires, explosions and criticality could cause fatalities to workers close to the accident. Prior to construction of a new modification of an existing facility, DOE Orders require detailed safety analyses to assure that facility designs and operating procedures limit the number of workers in hazardous areas and minimize risk of injury or fatality in the event of an accident.

Construct New Plutonium and Highly Enriched Uranium Storage Facilities

This section includes a description of radiological and hazardous chemical releases and their associated impacts resulting from either normal operation or accidents involved with the consolidation of Pu storage and collocation with HEU storage facilities at ORR. This storage would take place in a new consolidated Pu and HEU storage facility.

Normal operation of the new storage facility at ORR would result in impacts that are within applicable regulatory limits.

Normal Operation. There would be no radiological releases during the construction of a new Pu and HEU storage facility at ORR. Construction worker exposures to material potentially contaminated with radioactivity (for example, from construction activities involved with existing contaminated soil) would be limited to assure that doses are maintained ALARA. Toward this end, construction workers would be monitored as appropriate. Limited hazardous chemical releases are anticipated as a result of construction activities. However, concentrations would be within the regulated exposure limits. During normal operation, there would be both radiological and hazardous chemical releases to the environment and also direct in-plant exposures. The resulting doses and potential health effects to the public and workers are described below.

Radiological Impacts. Radiological impacts to the public resulting from the normal operation of the new Pu and HEU storage facility at ORR are presented in Table 4.2.5.9–1. The impacts from all site operations, including the new storage facility, are also given in the table. To put operational doses into perspective, comparisons with doses from natural background radiation are included in the table.

The dose to the MEI from annual storage facility operation would be 4.5×10^{-5} mrem. From 50 years of operation, the corresponding risk of fatal cancer to this individual would be 1.1×10^{-9}. The impacts to the average member of the public would be less. As a result of storage facility operation in the year 2030, the population dose would be 8.7×10^{-4} person-rem. The corresponding number of fatal cancers in this population from 50 years of operation would be 2.2×10^{-5}.

The dose to the MEI of the public from annual total site operations is within the radiological limits specified in NESHAPS (40 CFR 61, Subpart H) and DOE Order 5400.5, and would be 3.2 mrem. From 50 years of operation, the corresponding risk of fatal cancer to this individual would be 8.0×10^{-5}. The impacts to the average member of the public would be less. This activity would be included in a program to ensure that doses to the public are ALARA. As a result of total site operation in the year 2030, the population dose would be within the limit in proposed 10 CFR 834 and would be 34 person-rem. The corresponding number of fatal cancers in this population from 50 years of operation would be 0.85.

Facility and total site doses to onsite workers from normal operations are given in Table 4.2.5.9–2. Included are involved workers directly associated with the new storage facility, workers who are not involved with the storage facility, and the entire workforce at ORR. All doses fall within regulatory limits and administrative control levels. The associated risks and numbers of fatal cancers among the different workers from 50 years of operation are included in the table. Dose to individual workers would be kept low by instituting badged monitoring and ALARA programs and also workers rotations. As a result of the implementation of these mitigation measures, the actual number of fatal cancers calculated would be lower for the operation of this facility.

Hazardous Chemical Impacts. Hazardous chemical impacts to the public and to the onsite worker resulting from the normal operations of the new consolidation of Pu and collocation with HEU storage facilities at ORR are presented in Table 4.2.5.9–3. The impacts from all site operations, including the consolidation of Pu and

collocation with HEU storage facilities, are also included in this table. Total site impacts, which include the No Action impact plus the facility impacts, are provided. All analyses to support the values presented in this table are provided in Section M.3.

The HI to the MEI of the public is 1.5×10^{-4}, and the cancer risk is 1.6×10^{-7} as a result of operation of the consolidation of Pu and collocation with HEU storage facilities in the year 2030. The HI and cancer risk would remain constant over 50 years of operation, because exposures would be expected to remain the same. The total site operation, including the consolidation of Pu and collocation with HEU storage facilities, would result in an HI of 4.0×10^{-2} and a cancer risk of 1.6×10^{-7} for the MEI in the year 2030. This would be expected to remain constant as a result of 50 years of operation.

The HI to the onsite worker would be 1.3×10^{-3} and the cancer risk is 1.3×10^{-5} as a result of operation of the new consolidation of Pu and collocation with HEU storage facilities in the year 2030. The HI and cancer risk would remain constant over 50 years of operation, because exposures would be expected to remain the same. The total site operation, including the new facility, would result in an HI of 0.15 and a cancer risk of 1.3×10^{-5} for the onsite worker in the year 2030. This would be expected to remain constant as a result of 50 years of operation.

Facility Accidents. Under this alternative, the impacts of accidents are bounded by the impacts shown in Table 4.2.5.9–4 and are similar to those described in the construct new Pu storage facility; maintain existing HEU storage facilities at Y–12.

Involved workers, those that would work in the facilities associated with the proposed action, may be subject to injury and, in some cases, fatality as a result of potential accidents. The locations of workstations, number of workers, personnel protective features, engineered safety features, and other design details affect the extent of worker exposures to accidents. Certain accidents such as fires, explosions and criticality could cause fatalities to workers close to the accident. Prior to construction of a new modification of an existing facility, DOE Orders require detailed safety analyses to assure that facility designs and operating procedures limit the number of workers in hazardous areas and minimize risk of injury or fatality in the event of an accident.

Subalternative Not Including Strategic Reserve and Weapons Research and Development Materials

If the strategic reserve and weapons R&D materials are not included, the impacts to the public and to workers from the accident-free storage activities would be reduced in proportion to the decrease in the amount of material stored. The impacts from total site operations would decrease slightly. The risks of accidents would also tend to be lower.

Phaseout

Normal Operations. A phaseout of existing HEU storage facilities at ORR would reduce the impacts from radiological and chemical releases and exposures to levels very slightly below the No Action levels. As shown in Table 4.2.5.9–1, the radiological dose to the MEI from annual operations would be reduced by 1.4×10^{-3} mrem; the dose to the population would be reduced by 0.022 person-rem. The associated reductions in fatal cancer are included in the table. All workers involved in the transfer of the HEU from existing storage would be monitored to assure that their doses remain within regulatory limits and ALARA.

Facility Accidents. The phaseout operation will be conducted in accordance with DOE Orders to ensure that the risk to the public of prompt fatalities due to accidents or of cancer fatalities due to operations will be minimized. For current operations in the facility that would be phased out, the safety of workers and the public from accidents is controlled by Technical Safety Requirements that are specified in SARs or Basis for Interim Operations documents that have been prepared for the facility. Prior to initiating phaseout, the potential for accidents that could impact workers and the public will be assessed and, if necessary, applicable existing safety documentation will be modified to ensure safety for workers and the public.